

FSW Branch Process Improvement Initiative

5/24/04

- 6 years old
- Brought many FSW cultures into one organization
 - Different FSW Development and Test practices
 - Different Lessons Learned
- FSW SPI began several years ago, but funds became available for serious SPI only in FY04.
- SDO, GPM, JWST ISIM FSW development schedules gave us a 'window of opportunity' to deploy SPI.

FSW Business Practices -- examples

- FSW Plan Templates
 - Product Development
 - Test
 - CM
- FSW Requirements Template
- FSW Development Standards
 - Design Guidelines
 - Code
 - Inspection
 - Unit Test
- FSW Test Standards
 - Test Scenarios, Procedures, Peer Reviews
 - Test Reports, Test Traceability, ...
- FSW Review Templates
 - SRR, PDR, CDR, ..., STRR, ATRR
- FSW Testbed Requirements
- FSW Delivery Standards
 - Version Description Document
- Metrics
- FSW Cost Estimation
- FSW Staff Plan vs Actuals
- FSW Risk Management
- FSW Status Reporting
- DB of Trades/Decisions/Impacts that affect FSW cost & schedules
- FSW Lessons Learned
- FSW Glossary
- FSW Position Descriptions
- And 'training'
- And ...

Establishing FSW Business Practices

1. Start w/ Existing FSW Team assets
 - Usually similar products from different teams
2. Get Team Leads tog.
 - What worked and why?
 - How do the products from the different teams differ?
 - What's the best solution for 582 and who's going to write it?
3. Draft is produced & reviewed -- perhaps more meetings
4. 'Final draft' is sent to larger distribution for comments
5. Final draft is submitted to FSW Branch Standards CCB for baselining
6. *Use FSW Branch Process on each new FSW activity*
7. Review FSB-baselined products for appropriate update during/after each use by a FSW team.
8. Submit DCRs against baselined products.



Flight Software Branch Process Improvement Organization

Sponsors

Joe Hennessy/ISD
Rick Obenschain/AETD
Al Diaz/GSFC

GSFC EPG

Sally Godfrey/583
EPG = GSFC Eng'g. Process Group

FSB CCB (began 5/03)

FSB Team Leads
FSB Team Members
SPI Support Staff

Elaine Shell, Chair
Kequan Luu, Co-chair
Mike Tilley, CMO

Last Wed. of every month 9:30am 3/200

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Additional FSW Process Improvement

- **FSW Reuse Library**
 - Archive and control FSW products for reuse
 - Provide rules for FSW Reuse and Control Changes
 - FSW Reuse Library CCB
- **Core FSW Executive**
 - Basic FSW functions redefined to maximize FSW Reuseability
 - 'Fresh' requirements, design, code, UT, document for Reuse
 - Once tested, put into FSW Reuse Library and control via Reuse Library
- **Configurable Dynamic Simulator for FSW Test**
 - Collaboration w/ Code 590
 - Develop for reuse and ease of FSW test
 - Will be a key element of the FSW Reuse Library
- **Ground System Reuse**
 - ASIST
 - FSW and Ground Systems Reuse Library!
 - Real-time software product line for missions!
 - Flight and ground systems advance in parallel
- **Automated Tools**
 - Process Management, Automated Code Generation, FSW Test

What's the Real Value?

- Sharing of Lessons Learned
- Documentation of Domain-specific Processes
- Branch control and approval authority
 - Encourages common practices
 - Encourages maintenance of baselined products
- Much improved communications among staff
- Lower Risk
- Lower Costs

FSB Challenge

- STAY AHEAD OF SDO & ISIM LIFE-CYCLE NEEDS --
Be very prepared for new start-ups.
- CMMI level 2 by FY05
- CMMI level 3 by FY06